

Remarks

Applicants request entry of the foregoing amendments, consideration of the following remarks and reconsideration of the rejections set forth in the office action mailed November 6, 2008 setting a shortened statutory period for response to expire on February 6, 2009. Claim 12 has been cancelled and claims 11, 13-17, 20 and 25 have been amended.

Claims 20 and 25 were objected to because of informalities. More particularly, the word "in" was missing from the preamble of claim 11 and a close parenthesis was missing in claim 25. Appropriate amendments have been made in claims 11 and 25.

Claims 11, 12, 16-18 and 20 were rejected under 35 USC 112, second paragraph, as being indefinite from failing to particularly point out and distinctly claim the subject matter which applicants regard as their invention. More particularly, claim 12 was held improper in that "water-soluble amines" in claim 11 was defined in the specification as only the materials of claim 12. Applicants have cancelled claim 12 and incorporated some of the limitations therein into amended claim 11. Claims 20, 16 were rejected for reciting terms that lacked antecedent basis. Claims 16 and 20 have been amended.

Claims 11-15 were rejected under 35 USC 103(a) as being unpatentable over Callais et al. (US 2003/0149205). In the discussion of Callais et al. '205, the examiner has also cited the Charleux et al. article as showing formula (I) of the present application to be water-soluble. Applicants submit that the present invention is not render obvious by Callais et al. '205 alone and that the Charleux et al. article is not a proper prior art reference under 35 USC 103(a).

The present invention is directed toward a process of polymerization in a microemulsion, miniemulsion or emulsion wherein the monomer to be polymerized is in the organic phase of the emulsion and the aqueous phase of the emulsion includes the water-soluble alkoxyamine of the present invention. It was discovered that the alkoxyamine of the present invention was water-soluble and would function as both a polymerization initiator as well as an emulsifying

agent in such emulsions. Example 2 of the present application shows the surfactant nature (emulsifying activity) of an alkoxyamine of the present invention.

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Callais et al. '205 discloses the formation of a high-solids resin for coating applications wherein the polymerization of the resin takes place in a solvent system which dissolves both the monomer to be polymerized and the alkoxyamine initiator in an organic solvent. Applicants submit that Callais et al. '205 fails to include any indication that the alkoxyamine initiators described therein are water-soluble. The alkoxyamines disclosed by Callais et al '205 include a "Z" moiety which can be selected from: Z1 an aryl group; Z2 an ester type radical; Z3 a cyano radical or Z4 an alkyl radical. The Z group of Callais et al '205 is liberated from the alkoxyamine structure by heating to form an initiating free radical.

Applicants submit that the disclosure of Callais et al '205 of a controlled radical solution (which solution is solvent based) polymerization process in which the initiator is an N,N-dialkylamine of a structure in which the "Z" moiety is be selected from a variety of structures, fails to render obvious the process of the present invention. There is no indication in Callais et al '205 of emulsion based polymerization processes, let alone that an alkoxyamine having the specific structure of the present invention is water-soluble and able to function as both an initiator and an emulsifying agent that promotes the "mixing" of the aqueous and organic phases in the emulsion based process.

Applicants submit that the Charleux et al. article cited as showing formula (I) of the present application to be water-soluble is not a proper reference. The present application claims priority to French application No. 04.01150, filed 6 February 2004 under 35 USC 119. The inventors of the present application, after that priority date, published the Charleux et al. article. Filed herewith is an accurate translation of French application 04.01150 and an electronic copy of a certified copy of French application 04.01150. An original certified copy of French application 04.01150 is being submitted via mail to perfect applicants claim to priority made at the time of filing of the present application.

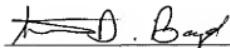
Claims 11-28 were rejected under 35 USC 103(a) as being unpatentable over Charleux et al US 6,353,065 in view of Callais et al. '205. Applicants submit that neither Charleux et al. '065 nor Callais et al. '205 alone or in combination render the present invention obvious.

As discussed above, the teachings of Callais et al. '205 are limited to solvent-based polymerization processes. There is no teaching, motivation or suggestion in Calais et al. '2005 that would lead a person skilled in the art to employ the alkoxoyamines claimed in the present application in emulsion based polymerization systems. Furthermore, it is not obvious that the solvent soluble alkoxoyamines disclosed by Callais et al. '205 would be water-soluble and function both as an emulsifying agent and an initiator in an emulsion based polymerization process.

Charleux et al. '065 discloses emulsion polymerization processes in the presence of a stable free radical wherein the stable free radical can be introduced into the polymerization medium in the form of a stable free radical or in the form of a molecule comprising a group that generates the stable free radical during the polymerization reaction. Charleux et al. '065 discloses that the stable free radical can be bonded to an emulsifying agent as a means of introducing it into the polymerization medium. The process disclosed by Charleux et al. '065 thus introduces a separate and unique surfactant or emulsifying agent to the polymerization medium in addition to the stable free radical. The present inventors discovered that the water-soluble alkoxamine of the specified formula can act as both the polymerization initiator as well as an emulsifying surfactant in an emulsion based polymerization process, thereby reducing the components in the polymerization medium. Applicants submit that Charleux et al. '065 fails to anticipate or render obvious the process of the present invention.

Applicants submit that in view of the foregoing amendments and comments, claims 11 and 13-28 are in condition for allowance and prompt favorable action is solicited.

Respectfully submitted,

  
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